

CLAIMS

1. A method of evaluating of a measuring electron microscope, comprising the steps of setting such modes of operation of a microscope, which will be used for subsequent measurements of sizes and line edge roughness; introducing a test-object which has a known straight edge into a chamber of objects of the microscope; orienting the test object on a stage of the microscope so that the edge of the test object is arranged vertically; scanning the test object with an electronic beam; obtaining an image of the edge of the test object and saving the image in a digital form; localizing the edge of the test object on the image on each line of scanning; producing and storing a set of values of a coordinate $X(i)$ which correspond to a position of the edge of an i -th line of scanning; approximating the sets of values $X(i)$ with a straight line; calculating deviations $\Delta(i)$ of coordinates $X(i)$ from a straight line on each line of scanning; analyzing a set of values of the deviations $\Delta(i)$; calculating an average Δ_{ave} and a maximal deviation Δ_{max} ; and if a maximum value of deviation Δ_{max} exceeds an acceptable tolerance of measurement, making a

conclusion that the microscope can not be used for measurements and needs an adjustment.

2. A method as defined in claim 1; and further comprising using as the test object a cleavage surface of a monocrystal composed of an electrically conductive material and having the straight edge.

3. A method as defined in claim 2, wherein said monocrystal is a crystal of a material selected from the group consisting of silicon, copper and zinc sulfide ZnS, etc.

4. A method as defined in claim 1; and further comprising using as the test object a relief ledge which is formed in a surface layer of a monocrystal by methods of selective chemical etching and having atom-smooth surfaces and straight edges.

5. A method as defined in claim 1, wherein said approximating with a straight line includes using a method of least squares.

6. A method as defined in claim 1; and further comprising before localization of the edges of the test object on each line, suppressing noises of a video signal.